From devastation...
to education.

COYOTE CREEK
OUTDOOR CLASSROOM

Engineer's Report
August 2000

Coyote Creek Watershed
Santa Clara Valley Water District
Open Space Restoration Flood Protection

Table of Contents

EXECUTIVE SUMMARY 1

PROJECT HISTORY 1
PROJECT DEVELOPMENT 1
PROJECT DESCRIPTION 1

INTRODUCTION 2

PROJECT HISTORY 2
PROJECT SETTING..2
PROJECT DEVELOPMENT 3

PROJECT DESCRIPTION..5

SLOPE STABILIZATION..5
RIPARIAN RESTORATION 5
UPLAND TERRACE PLANTINGS 6
OUTDOOR CLASSROOM 6
GAZEBO..7
  Style..7
  Location 7
  Seating 8
  Building Materials 8
VIEWING PLATFORM 8
  Style..8
  Location 9
  Building Materials 9
GROUNDWATER MONITORING WELL 9
  Location 9
  Storage Shed 9
FENCE..9
CIRCULAR DRIVEWAY 10
APPURTENANT STRUCTURES 10

RECOMMENDED ALTERNATIVES..11

GAZEBO..11
  Style..11
  Location 11
  Seating 11
  Building Materials 11
VIEWING PLATFORM 11
  Style..11
  Location 11
GROUNDWATER MONITORING WELL 11

ENVIRONMENTAL/PERMITTING..14

CITY OF SAN JOSE 14
CALIFORNIA DEPARTMENT OF FISH AND GAME 14
REGIONAL WATER QUALITY CONTROL BOARD 14
CEQA 14

COMMUNITY INVOLVEMENT 15

COST ESTIMATE 15

SCHEDULE..15

List of Figures

FIGURE 1 – FLOODED WILLIAM STREET HOMES 2
FIGURE 2 - LOCATION 4
FIGURE 3 – SLOPE STABILIZATION WITH GEOSYNTHETIC..5
FIGURE 4 – RIPARIAN AREA 6
FIGURE 4 – RECTANGULAR GAZEBO STYLE 7
FIGURE 5 – HEXAGONAL GAZEBO STYLE..7
FIGURE 6 – ALTERNATIVE GAZEBO LOCATIONS 7
FIGURE 7 – ALTERNATIVE DRIVEWAY 8
FIGURE 8 – PLATFORM STYLES 9
FIGURE 9 – FENCE STYLE 10
FIGURE 10 – GAZEBO LOCATION..11
FIGURE 11 – VIEWING PLATFORM LOCATION 11
FIGURE 12 – WELL LOCATION..12
FIGURE 13 – ARTIST'S RENDERING……………………………………………………...…………….15

Executive Summary

Project History

As a result of frequent flooding along Coyote Creek, three homes on East William Street in San Jose suffered repeated damage. During the most recent event in January 1997, each suffered over $110,000 in estimated damages. If repaired and/or left standing, these homes would have remained subject to frequent flooding, causing future damage. After consideration of several alternatives, the Santa Clara Valley Water District (District) determined that the acquisition and demolition of the homes was the most viable and environmentally sound option for flood management in the East William Street area. With the full cooperation of the resident owners, the District completed purchasing negotiations on the three properties in 1997. In early 1998, the District cleared the site of the homes and appurtenant structures creating 1.7 acres of open space. In October 1998, the District Board of Directors accepted staff's recommendation that the site be used for riparian restoration and for a District sponsored flood education center.

Project Development

The acquired properties have several unique features that were considered when approving the proposed project. The three contiguous properties form approximately 1.7 acres, with 0.05 acres of the property within the vegetated creek bank. The site is very private, with virtually no street frontage. The site is bordered by ten neighboring yards on three sides and 140 linear feet of heavily vegetated creek bank on the fourth. A single private road (driveway) runs between existing single-family residences and provides access to all three parcels and to no other parcels.

The William Street site contains two habitat zones. There is a 0.05 acre riparian area close to the creek where vegetation is supported by creek water or groundwater that is relatively close to the surface. The remainder of the site, approximately 1.6 acres, is considered "high terrace" or upland area. This type of land is too far above the groundwater table to support riparian vegetation, but would typically support oaks, grasses, or chaparral in its native state.

The location and history of the William Street site provide a unique opportunity for supervised school field trips, with discussions and demonstrations covering flooding, erosion, pollution, water quality, and native vegetation. Also, the site has been selected as a location for a groundwater monitoring well to be installed as part of a joint effort by the District and the US Geological Survey to study the Santa Clara Valley groundwater basin.

Project Description

The proposed Coyote Creek Outdoor Classroom will be an outdoor flood educational center managed by the District's Public Information Office to increase flood awareness and stream stewardship among the public. The Outdoor Classroom will supplement the District's existing educational program by providing easy access to a creek for water quality sampling, opportunities for review of computer generated groundwater quality data, a vantage point over the water for observing nature, and development and demonstration of waterwise landscaping options. Supervised field trips will be led by the District Education Program coordinator or by trained teachers. Lessons at the site will provide the opportunity for actual studies in the field for both students and teachers. Students will see, first hand, what a floodplain looks like, measure erosion of the creek, and monitor the creek's health through on-site experiments. Teachers can be trained on the protocols for field study experiments in the same environment that they will be using with their students.

The area is useable for flood education virtually immediately. The existing driveway and turnaround will provide site access and parking for a school bus and a few cars, if necessary. A new locking gate has been installed at the entrance to the site. Most healthy trees will remain, to the extent possible. The site will be enhanced with a new perimeter fence, a gazebo with seating for forty, a viewing platform, a small storage shed, a groundwater monitoring well, native plantings and demonstration gardens, educational displays, a flood level gage, benches, and a drinking fountain. Neither permanent garbage receptacles nor restroom facilities will be provided at the project site, in an effort to minimize maintenance requirements and encampments. Garbage services and restroom facilities are available across the street at William Street Park.

To mitigate neighbor's security concerns, a new gate was installed at the entrance to the site and a new fence will be installed along the perimeter of the property. The gate will be locked at all times and will be unlocked only during District supervised school visits. The new fence will replace the discontinuous fence currently around the property and will be designed to increase the neighbor's privacy during school visits. In most cases, the existing fences owned by the neighbors will be removed and replaced with the new fence at no cost to the neighbors.

Three structures will be built on site as part of the outdoor classroom. Covered seating for approximately 40 people will be a major component of the outdoor classroom. The structure will be a gazebo without any enclosing walls. The second structure will be a viewing platform constructed on the top of bank. The structure will be similar to a backyard deck but will be removable from the foundation. This may be necessary during the winter so that District maintenance staff will have unobstructed access to Coyote Creek as necessary. The third structure will be a small shed to provide protection of the groundwater monitoring well and associated electronic equipment and storage for educational materials.

The project planning, design, and construction cost estimate is approximately $650,000. The project is scheduled to be completed by November 2000.

Introduction

As a result of frequent flooding along Coyote Creek, three homes on East William Street in San Jose suffered repeated damage. If repaired and/or left standing, these homes would have remained subject to frequent flooding, causing future damage to the homes. After consideration of several alternatives, the Santa Clara Valley Water District (District) determined that the acquisition and demolition of the homes was the most viable and environmentally sound option for flood management in the East William Street area. In 1997, the District purchased the homes and cleared the site of the homes and appurtenant structures. In 1998, the District Board of Directors accepted staff's recommendation that the 1.7 acres of acquired property be used for riparian restoration and for a District sponsored flood education center.

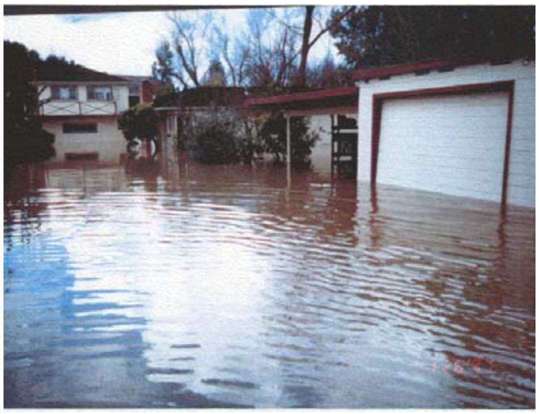
The Coyote Creek Outdoor Classroom will be an outdoor flood educational center managed by the District's Public Information Office to increase flood awareness among the public. The location and history of the William Street site will provide a unique opportunity for supervised school field trips, with discussions and demonstrations covering flooding, erosion, pollution, water quality, and native riparian and upland terrace vegetation.

Project History

In 1973, the District prepared a planning study to evaluate flood management alternatives for the Coyote Creek floodway. The study addressed areas located within the confining high banks of the creek, including the area near William Street and 16th Street in San Jose. The study concluded that acquiring some properties would be the most viable and environmentally sound option for flood management. Similar recommendations were made by the United States Army Corps of Engineers in a 1980 Survey Investigation. The three homes at 789, 791, and 793 East William Street were among those properties identified for potential purchase and removal.

The three homes were damaged by storm events in 1982, 1983, and 1997. Each of the three homes suffered over $110,000 in estimated damages during the January 1997 flood event. Following the 1997 storm, the District developed a Voluntary Property Acquisition Program with criteria to be applied to residences substantially damaged during a flood event. Application of the criteria confirmed that three homes at 789, 791, and 793 East William Street were eligible for acquisition by the District under the new program. With the full cooperation of the home owners, the District purchased the three homes by May 1997. In 1998 the District demolished the homes and appurtenant structures, creating 1.7 acres of open space.

Figure 1 – Flooded William Street Homes



In October 1998, the Board accepted staff's recommendation that the 1.7 acre site be used for riparian restoration and for a District sponsored flood education center. In addition, the District will remain receptive to compatible land use proposals from the community and a potential future joint use agreement with the City of San Jose for a bicycle/pedestrian trail.

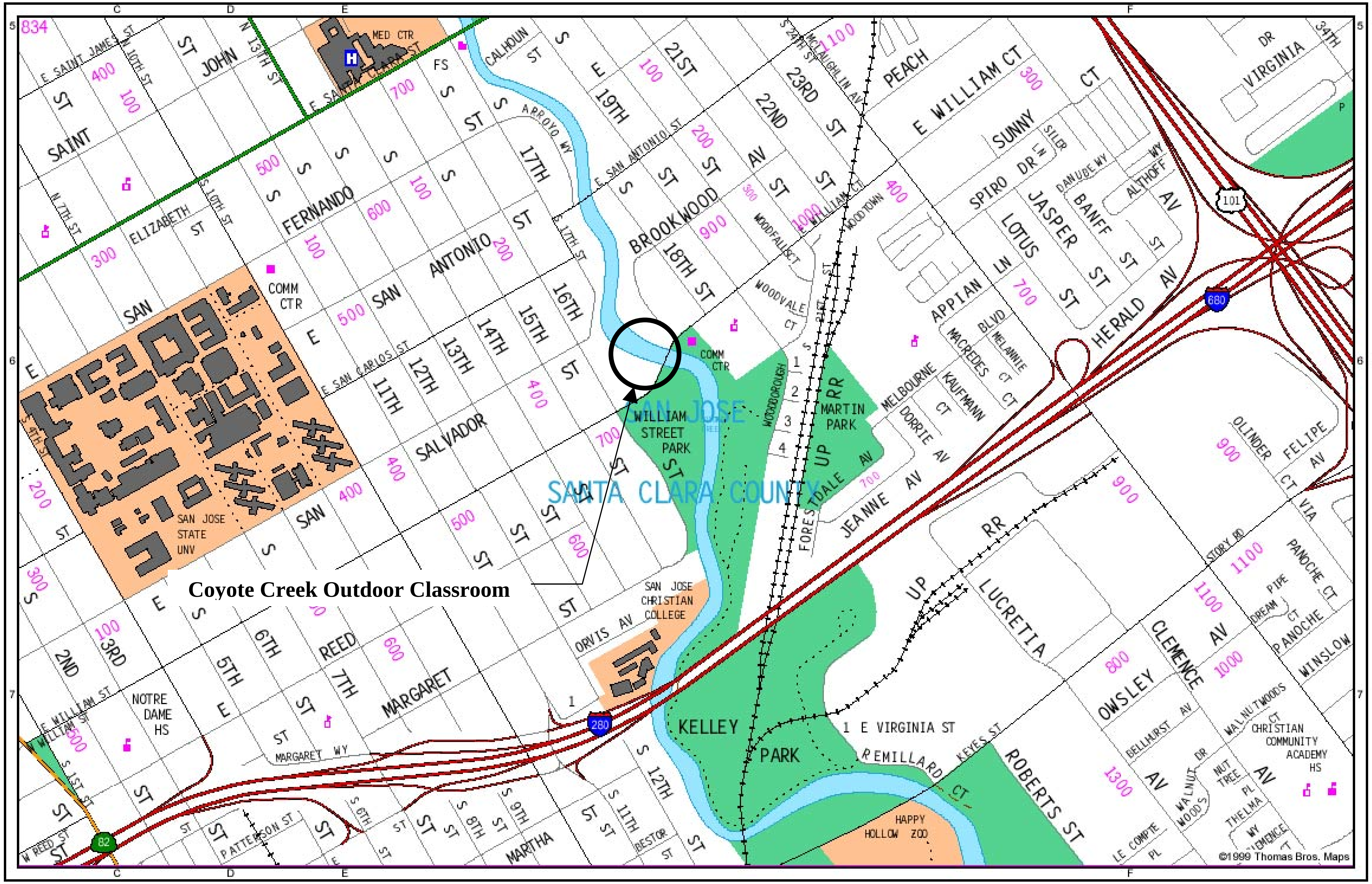
Project Setting

The site is located within the Coyote Creek floodway and will continue to flood on a regular basis. The magnitude of the January 1997 event was estimated to have a 10- to 15-year return period. During the event, water ponded up to 6 feet deep inside the lower elevation structures. The 1 percent Federal Emergency Management Agency flood elevation is up to 10 feet higher than the existing grade.

The project site is located within a residential neighborhood. Across East William Street to the south, the City of San Jose has developed a community park (William Street Park) and a community center (Olinder Community Center), with play equipment, sports fields, picnic tables, restrooms, and lawn area. Olinder Elementary School, a City of San Jose public elementary school, is located a short distance from the project site. The Outdoor Classroom can be coordinated with these nearby facilities.

Project Development

The acquired properties have several unique features that were incorporated into the land use decision. The three contiguous properties form approximately 1.7 acres, with 0.05 acres of the property within the vegetated creek bank. The site is very private, with virtually no street frontage. The site is bordered by ten neighboring yards on three sides and 140 linear feet of heavily vegetated creek bank on the fourth. A single private road (driveway) runs between existing single-family residences and provides access to all three parcels and to no other parcels. Access to the site can be controlled by maintaining a locking gate at the top of the driveway.



Coyote Creek Outdoor Classroom

Figure 2 - Location

Project Description

The District approved a combined use for the William Street property. The combined use alternative includes repairing and restoring the riparian area and building a flood education center. The approved use also allows for the coordination of a future joint use agreement with the City of San Jose for a potential pedestrian/bicycle path or community sponsored programs, if requested.

Slope Stabilization

The existing creek bank slope is 1.5 feet horizontal to 1.0 foot vertical (1.5:1). The slope is very steep and significant erosion occurs during high flow events, creating unstable slopes and potential water quality issues.

The Outdoor Classroom site serves as an important access point to Coyote Creek for the District's Maintenance personnel. During maintenance activities, the equipment is parked on top of the bank so that trees and other large objects can be pulled out of the creek. As a result, the heavy equipment induces a large surcharge load on the top of bank causing the bank to become unstable. The slope will be stabilized and strengthened to protect against potential failure during maintenance activities and to protect water quality by minimizing erosion.

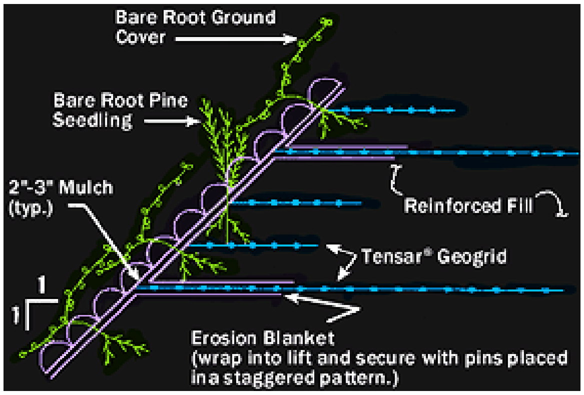
Bank regrading and revegetation of the riparian area will be the first order of work. The District, as well as the California Department of Fish and Game and the National Marine Fisheries Service, generally do not allow work to be conducted between creek banks after October 15. By performing bank grading and revegetation prior to October 15, effects to Coyote Creek water quality and aquatic habitats are avoided or minimized.

First, the bank will be backcut (excavated) to the line and grade required for the placement of the first layer of compacted fill and geosynthetic material (see Figure 3). The excavated soils will be stockpiled on site. The soil will then be spread and compacted to the specified density using standard compaction equipment and procedures.

Geosynthetic material will be placed on the compacted fill perpendicular to the slope face and extended back from the slope face to the distance specified by the geotechnical engineer. The geosynthetic is a high density polyethylene (HDPE) material that is engineered to provide high tensile strength and carry large loads, like those applied during maintenance activities. The material has an open aperture structure that allows the slope face to revegetate. The soil compaction and material placement steps will be repeated until the entire bank is rebuilt.

Lastly, the slope face will be scraped to the final design slope (2:1) and will be revegetated with native riparian plantings. By replanting the bank with native riparian species, the roots of the plants will help stabilize the slope. An erosion may be placed on the slope face to protect against erosion during the plants' establishment period.

Figure 3 – Slope Stabilization with Geosynthetic



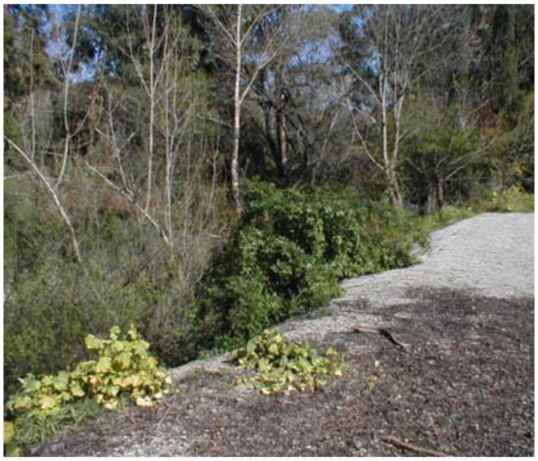
Riparian Restoration

The William Street site contains two habitat zones. The first zone is a riparian area close to the creek where vegetation is supported by creek water or groundwater that is relatively close to the surface. This area is approximately 0.05 acres and is characterized by a few mature willows (*Salix spp*), black cottonwoods (*Populus balsamifera ssp. Trichocarpai*), and Northern California black walnuts (*Juglans Californica* var. *hinsii*). 65 percent of the understory is covered by the non-native periwinkle (*Vinca major*), 15 percent by Algerian Ivy (*Hedera canarensis*) and 5 percent by Himalayan blackberry (*Rubus discolor*).

The riparian zone is not well vegetated and appears unstable in some areas. The 140 feet long by 15 feet wide section of the west bank will be stabilized by regrading and revegetating with native riparian plantings. Revegetating or enhancing this section of the creek's riparian zone would implement the District staff recommendation for use of the William Street site and is compatible with the Outdoor Classroom project.

The riparian area will be revegetated with appropriate low lying riparian species. An erosion control seed mix will be used for the area of the bank that is regraded. The mix may consist of California native grasses (e.g., *Hordeum californicum, Elymus glaucus* 'Berkeley,' *Bromus carinatus*) on slopes flatter than 3:1. 'Zorro' Annual Fescue could be added to the mix where slopes are steeper (e.g., 2:1). Compatible native species will be selected from reference sites located within the Coyote Watershed and checked against the District's *Streamside Planting Guide*, the District list of *Prohibited Plants on SCVWD Creeks*, the California Department of Fish and Game's *Riparian Revegetation List,* and the *Coyote Watershed Program Aesthetic Guidelines* to ensure consistency with appropriate guidelines. Final selection of species will be made during detailed design.

Figure 4 – Riparian Area



Upland Terrace Plantings

The remainder of the site, approximately 1.6 acres, is considered "high terrace" or upland area. This type of land is too far above the groundwater table to support riparian vegetation, but would typically support oaks, grasses, or chaparral in its native state. The upland habitat is characterized by ruderal grasses and herbaceous species, as well as by non-native trees indicative of previous disturbance and landscaping of the site. A list of the existing site trees and the proposed new tree plan is included in Appendix A. The list specifies which trees are identified for removal based on type, size, and health of the tree. All healthy, native trees as well as landscape, ordinance-sized trees (18-inch diameter at two feet above grade) will be left undisturbed.

The high terrace area will be partially revegetated with upland native plantings. The design of the upland terrace plantings will be focused on incorporating a wide range of native, drought tolerant plants. Compatible native species will be selected from reference sites located within the Coyote Watershed and checked against the District's *Streamside Planting Guide* and the *Coyote Watershed Program Aesthetic Guidelines.* Final selection of species will be made during detailed design. Pathways, benches, and educational signs will be incorporated into the upland terrace planting design.

Outdoor Classroom

The Coyote Creek Outdoor Classroom will be an outdoor flood educational center managed by the District's Public Information Office to increase flood awareness among the public. The location and history of the William Street site will provide a unique opportunity for supervised school field trips, with discussions and demonstrations covering flooding, erosion, pollution, water quality, and native vegetation.

Supervised field trips will be led by the District Education Program coordinator or by trained teachers. The classroom will be made available to a potential of 100 schools (K-12). The facility will be operating between September and November and between March and May with approximately twenty field trips per period. School field trips will typically include twenty to thirty students accompanied by approximately four teachers. A maximum of ten vehicles will be allowed on the site during visits.

Classroom Objectives

- *Encourage stream stewardship*
- *Develop watershed pride*
- *Promote environmental sciences*
- *Flood Education/FPM*

Lessons at the site will provide the opportunity for actual studies in the field for both students and teachers. Students will see, first hand, what a floodplain looks like, measure erosion of the creek, and monitor the creek's health through on-site experiments. Teachers can be trained on the protocols for field study experiments in the same environment that they will be using with their students.

Three structures will be constructed as part of the outdoor classroom project, a gazebo, a viewing platform, and a groundwater monitoring well with storage shed. Additional features include the storage shed, circular driveway, perimeter fence with locking gate, educational signs and benches.

Gazebo

The primary structure will be a gazebo with seating for approximately 40 people. Various components of the gazebo must be reviewed before a final structure can be chosen. The alternative design considerations include:

- Style
- Location
- Seating
- Building Materials

Style

For the gazebo style, the simplest and most cost-effective structure will be a "package" structure. Multiple manufactures carry various gazebo models that would be suitable for the covered seating. The gazebo will need to be of appropriate size, provide protection from the sun, be flood tolerant and blend with the surrounding homes. To satisfy these design criteria, the gazebo may need to be custom designed.

A rectangular shaped or hexagonal shaped gazebo is being considered. Both gazebos are approximately 18 feet high and approximately 1,000 square feet. Conceptual drawings are shown in Appendix B. The gazebo roof may be slats, as shown in the hexagonal style, or completely covered, as shown in the rectangular style in Figures 4 and 5.

Figure 4 – Rectangular Gazebo Style

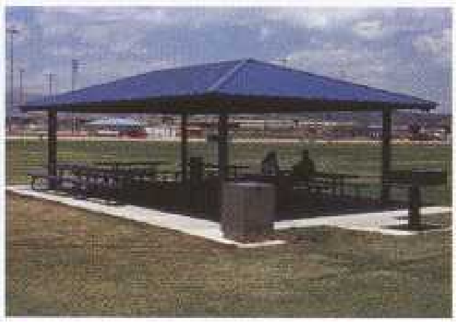
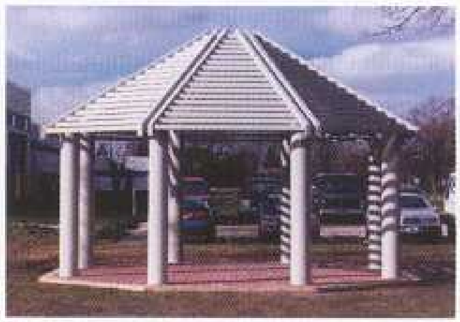


Figure 5 – Hexagonal Gazebo Style

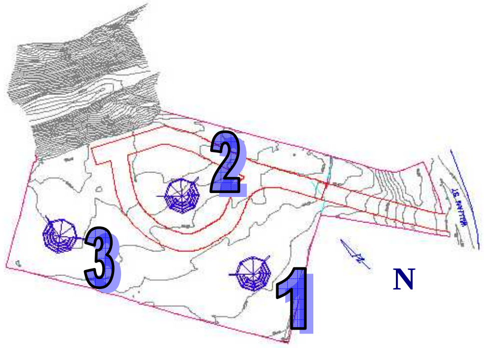


Location

The location of the gazebo will be selected based on three criteria. The first criterion is the City of San Jose setback requirements. All structures must be a minimum of 25 feet from any fence line. The second criterion is to minimize the disturbance to the neighbors when the site is in use. The third criterion is ensure that the District's Maintenance Unit has adequate access and staging room for equipment that will routinely be brought on-site for creek and site maintenance.

Three different locations for the gazebo have been identified and are shown on Figure 6. The location of the gazebo will dictate the location of the groundwater monitoring well and the layout of both the circular driveway and paths. The four possible site plans associated with the various gazebo, well, and driveway locations are included in Appendix B.

Figure 6 – Alternative Gazebo Locations



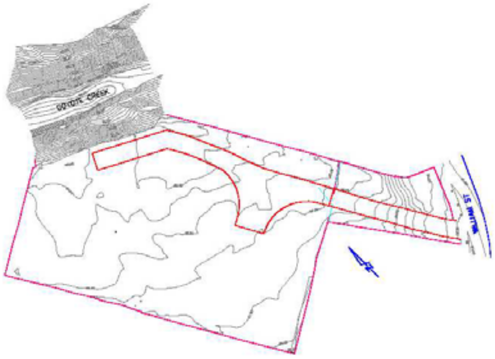
Gazebo location 1 is in the southwest corner of the property. The gazebo will be positioned so that the students will be facing the creek. This will help minimize disturbance to the surrounding neighbors because the voices will be directed away from the homes. This location satisfies both the setback and the maintenance criteria. However, neighbors located immediately adjacent to the proposed site have expressed concern over the proximity of the gazebo to their home.

Location 2 is in the middle of the existing circular driveway. After portions of the existing driveway are removed, there will be sufficient area for the gazebo. This alternative places the gazebo furthest away from the neighbors. The students would face the creek so their voices would not disturb the adjacent neighbors. Because Location 2 is in the middle of the property, there will be no conflict with the setback requirements and would not conflict with maintenance activities.

If location 2 is selected, an alternative driveway configuration will have to be considered as shown in Figure 7. The asphalt driveway will still be removed but part of the aggregate base driveway will also be removed. The access point for the maintenance personnel will remain but a turnaround will not be provided. A new turnaround for the buses will be provided to the south of the gazebo. This driveway configuration provides parking for the bus and up to two additional cars. The reconfiguration provides the minimum space requirements for the bus to turn around.

Location 3 is the northwest corner of the property and is very similar to Location 1. Again, the gazebo will be positioned so that the students face the creek. This location satisfies the setback and maintenance requirements. Unfortunately, the gazebo will have to be situated in such a way that the existing trees will interfere with the student's view of the creek and it is anticipated that neighbors would express the same concern of proximity to their home.

Figure 7 – Alternative Driveway



Seating

Seating for the gazebo will accommodate 40 persons. Three seating alternatives are being considered. Alternative 1 is to use metal bleachers. This alternative will require a concrete foundation. Although metal bleachers are common, the style does not blend with the remainder of the site.

Alternative 2 will be stadium style seating. The seating can be built by stacking wood timbers and placing soil behind them. By using wood and soil for seating, the seats will blend with the rest of the site. However, the seating may not withstand flooding.

Alternative 3 is to build stadium style seating out of concrete. The seating will withstand flooding but the concrete will have to be architecturally treated to blend with the natural setting.

Building Materials

The two types of building materials considered for the gazebo were redwood and steel. Factors affecting the decision include the structural design requirements for a gazebo of this size and the aesthetics. The gazebo will be designed by an architect and a licensed structural engineer to confirm that the necessary design requirements are satisfied.

Ideally, the gazebo would be constructed out of redwood to blend with the natural setting. Unfortunately, an all wood structure may not meet the strength requirements necessary for a gazebo of this size.

Gazebos of this size would typically be constructed with steel supports and structural components. The steel will have to be coated for rust resistance and the coating color must be aesthetically consistent with the surrounding homes and other project components.

A third option is to combine the two materials to provide the structural integrity necessary with the steel and enhance it with the redwood.

Viewing Platform

The viewing platform will be constructed on the top of bank to overlook Coyote Creek. The platform will be designed to accommodate 15 people. The platform will provide an opportunity for students to observe the creek, plant life, animal life and aquatic life in their natural conditions. Various components of the platform must be reviewed before a final structure can be chosen. The alternative design considerations include:

f Style

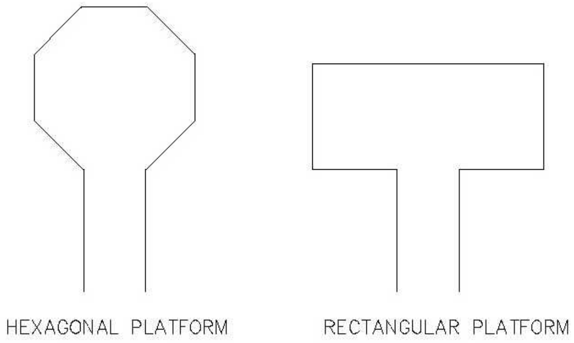
Location

Building Materials

Style

The viewing platform will be similar to a backyard deck. Two alternative styles are being considered, a rectangular platform or a hexagonal platform. Both alternatives will be ADA compliant and will be designed to accommodate approximately 15 people. The only difference between the two alternatives is the shape.

Figure 8 – Platform Styles



Maintenance staff has requested that a structure that can be removed from its foundation be considered so that access to the creek can be maximized when necessary. To protect the students, a removable rail along the creek bank will also be investigated as part of the viewing platform. By being able to remove both the viewing platform and rail, safety on the site will be maximized and maintenance will not lose an important access point to the creek.

The platform foundation will be mainly supported on the top of bank. The supports for the deck will be designed to minimize the potential for debris to collect behind the supports. Conceptual drawings are shown in Appendix B.

Location

The viewing platform can be located at any point along the top of bank, but it is important to consider maintenance access to the creek. For this reason, only two locations will be considered. Refer to Appendix B for a site plan of both locations.

Location 1 is the upstream end of the bank. This position provides sufficient space for the platforms foundation and reduces that amount of existing trees that may need to be removed to provide an unobstructed view of the creek.

Location 2 is at the downstream end of the creek. This portion of the bank is highly vegetated and several large diameter trees would have to be removed.

Building Materials

The platform foundations will be concrete and the deck framing and railing will be redwood.

Groundwater Monitoring Well

The District, in coordination with the U.S. Geological Survey (USGS), is conducting a study to analyze the geohydrological framework of the Santa Clara Valley. The William Street site has been selected as an ideal location for the siting of a groundwater monitoring well for the study. The monitoring well's function will be incorporated into the Outdoor Classroom's curriculum. The students will be able to download and evaluate computer generated water levels and water quality data.

Location

The monitoring well site will be chosen so that the water quality of the creek does not significantly affect the sampling data. Also, the site will be chosen so that it can be easily accessed by the students visiting the site, does not interfere with maintenance activities, and is protected from vehicles using the driveway. Two alternative locations have been identified. Refer to Appendix B for a site plan of the two locations.

Location 1 is in the northwest corner of the property approximately 85 feet from the existing top of bank. Location 2 is in the southwest corner of the site approximately 200 feet from the existing top of bank. The final groundwater monitoring well location will be dictated by the location of the gazebo.

Storage Shed

A shed will protect the well and associated equipment. This shed will also be used by the District staff for storage of educational materials. The shed will be designed to demonstrate floodproofing and to blend with other project structures.

Fence

To mitigate neighbor's security concerns, a new gate has been installed at the entrance to the site and a new fence will be installed along the perimeter of the property. The gate will be locked at all times and will be unlocked only during District supervised school visits. The new fence will replace the discontinuous fence currently around the property and is designed to increase the neighbor's privacy during school visits. In most cases, the existing fences owned by the neighbors will be removed and replaced with the new fence at no cost to the neighbors. Two alternative fence heights will be considered, a seven foot fence and an eight foot fence. Two neighbors have existing fences which are eight feet and these neighbors have expressed their preference for maintaining the fence height.

Figure 9 – Fence Style

Circular Driveway

The driveway and turnaround will provide site access and staging for the maintenance unit and parking for a school bus and several cars, if necessary. There is an existing aggregate base circular driveway that connects to an asphalt driveway. The asphalt driveway will be removed and the aggregate base driveway will be improved and completed. The new aggregate base driveway will be 18 feet wide to accommodate the maintenance group's needs for using large equipment to pull various obstructions from the creek. Pathways to the structures that cross the driveway will be designed to provide a hard smooth surface across the aggregate driveway (ADA compliance requirement).

Appurtenant Structures

Along with the project components described above, there will be other features incorporated on site. Three District Program benches have been reserved. The benches provided by the District incorporate signage identifying some of the plant and animal species that can be found along Coyote Creek. Additional educational signs will be incorporated into the landscaping describing the various types of plants. This will be a way for students to learn more about both the upland terrace and riparian plantings.

Additionally, a drinking fountain will be provided near the gazebo. Finally, a flood marker will be installed. The marker will show the various elevations of the past historical flooding and potential flood level.

Recommended Alternatives

The following sections describe the Recommended Alternatives for each of the project components. Figure 13 presents an artist's rendering of the recommended alternative.

Gazebo

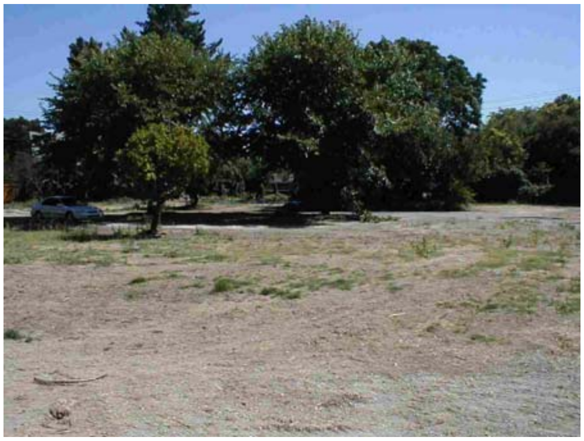
Style

The proposed gazebo style is a hexagonal gazebo with slat roof. The shape minimizes the amount of trees that would have to be removed. The slat roof provides adequate protection from the sun and is more consistent with a residential gazebo.

Location

Location 2 is the recommended location. This location is the furthest from the surrounding homes and provides an unobstructed view of the creek. The two mulberry trees to remain will provide some shade. The alternative driveway configuration will be used.

Figure 10 – Gazebo Location



Seating

Concrete stadium seating will withstand flooding. The concrete can be architecturally treated to blend with the natural setting.

Building Materials

A wooden gazebo will blend with the surrounding homes. The gazebo will have to be designed by a structural engineer.

Viewing Platform

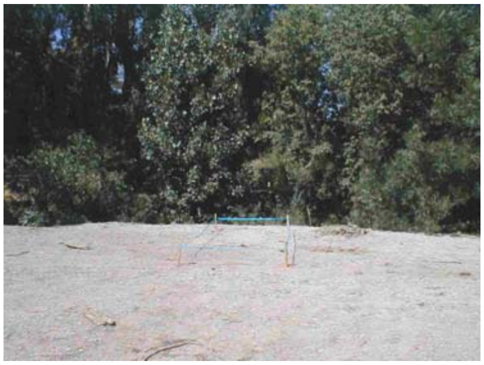
Style

The proposed viewing platform is a hexagonal platform constructed with redwood. By using a wooden hexagonal footprint the platform will be consistent with the gazebo footprint. The viewing platform will be designed for the possibility of having the platform removed from its foundation. This would enable the maintenance staff to maximize the area at the top of bank during maintenance activities.

Location

Location 1 at the upstream end of the bank is the recommended location. This location will have the minimal amount of interference with the maintenance activities. Also, the location provides an ideal setting for students to observe the creek through the tree canopy. The students will get the full perspective of a natural creek habitat.

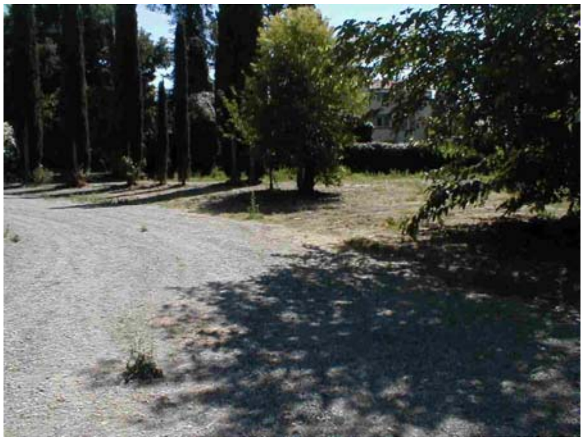
Figure 11 – Viewing Platform Location



Groundwater Monitoring Well

Location 1 is the recommended location. The location provides adequate distance from the creek and provides a safe distance from the driveway.

Figure 12 – Well Location



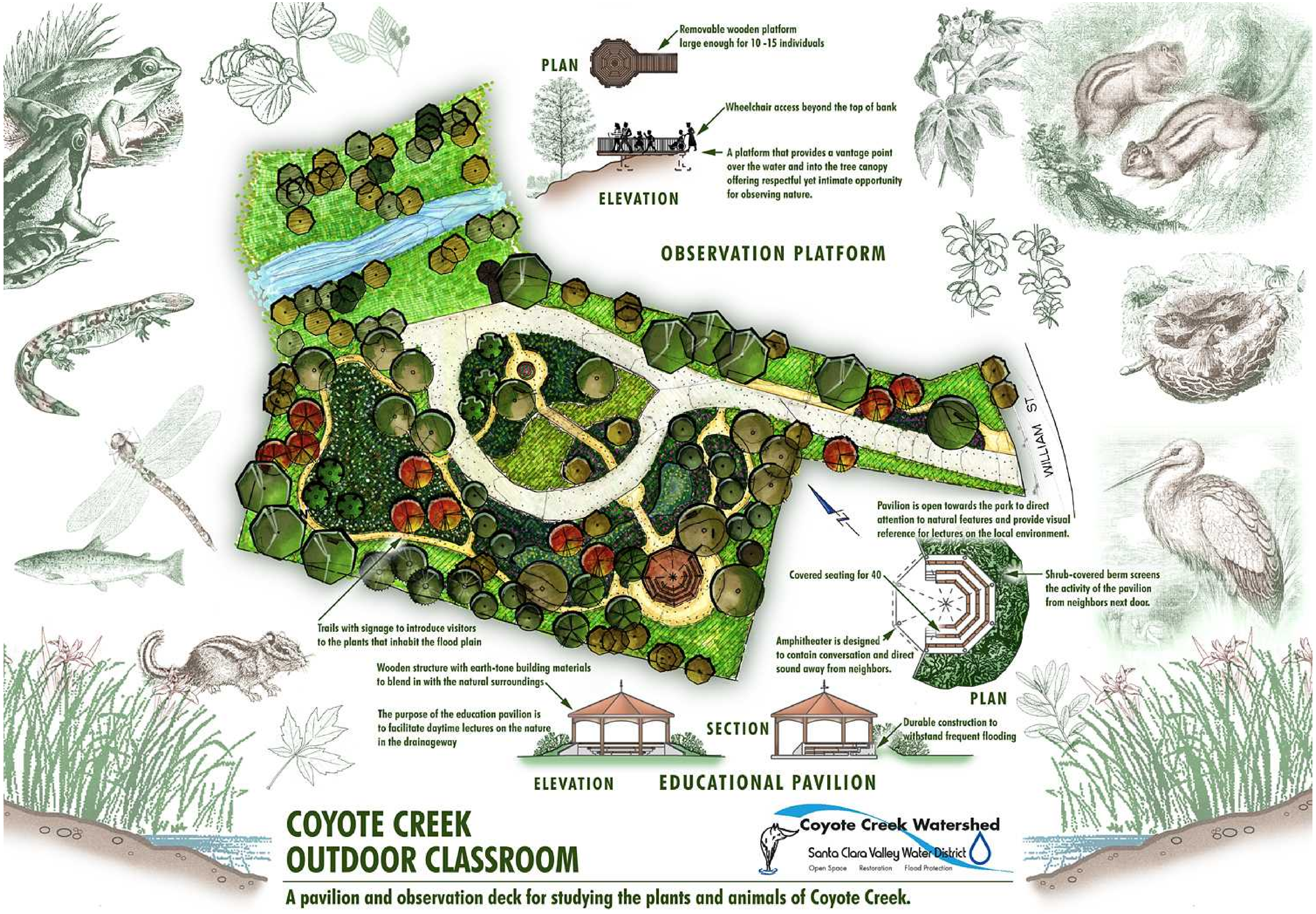

PLAN
Removable wooden platform large enough for 10 -15 individuals
Wheelchair access beyond the top of bank
A platform that provides a vantage point over the water and into the tree canopy offering respectful yet intimate opportunity for observing nature.
ELEVATION
OBSERVATION PLATFORM
WILLIAM ST
Pavilion is open towards the park to direct attention to natural features and provide visual reference for lectures on the local environment.
Covered seating for 40
Shrub-covered berm screens the activity of the pavilion from neighbors next door.
Amphitheater is designed to contain conversation and direct sound away from neighbors.
PLAN
Trails with signage to introduce visitors to the plants that inhabit the flood plain
Wooden structure with earth-tone building materials to blend in with the natural surroundings
The purpose of the education pavilion is to facilitate daytime lectures on the nature in the drainageway
SECTION
Durable construction to withstand frequent flooding
ELEVATION
EDUCATIONAL PAVILION
COYOTE CREEK
OUTDOOR CLASSROOM
Coyote Creek Watershed
Santa Clara Valley Water District
Open Space Restoration Flood Protection
A pavilion and observation deck for studying the plants and animals of Coyote Creek.

Figure 13 – Artists Rendering

Environmental/Permitting

Several agencies require permits for this project, including the City of San Jose, California Department of Fish and Game, and the Regional Water Quality Control Board.

City of San Jose

A site development permit application has been submitted to the City of San Jose's Planning Division. As part of the site development permit application process, an environmental clearance application was also submitted. This is a component of the California Environmental Quality Act (CEQA) process. Because of the minimal impacts to the creek, the environmental clearance application can be approved at the Planning staff level. If the environmental impacts are determined to be substantial then the application will have to be approved by the Planning Commission.

The Building Division may require a building permit for the design and construction of the Outdoor Classroom, stadium seating, and viewing platform. Detached, non-residential units with floor areas under 500 square feet and fences less than six feet in height are exempt from the building permit requirements. For exempt structures, associated plumbing, mechanical, and electrical permits may still be required.

The Department of Public Works has regulatory authority over publicly owned property in the City. It also issues grading permits, Geologic Hazard Clearances and Flood Elevation Certificates for private development.

California Department of Fish and Game

The California Department of Fish and Game will require a streambed alteration agreement for the regrading and revegetation work on the creek bank and the construction of the creek bank structure. The process for approving the streambed alteration agreement will take approximately 90 days.

Regional Water Quality Control Board

The Regional Water Quality Control Board (Regional Board) will not require a National Pollutant Discharge Elimination System (NPDES) permit for construction because the project footprint is less than 5 acres.

CEQA

The District has prepared an Initial Study Negative Declaration. The public comment period for the document began on June 21, 2000 and will end July 21, 2000.

Community Involvement

Because of the location of the site, it will be important the adjoining neighbors are given the opportunity to comment on the design. A community meeting was held on December 8, 1997 to discuss the Districts proposals of how to use the land. The major areas of concern were security and maintenance of the site. The neighbors did not want the site to become an attraction for homeless and therefore all structures on site should be minimal and should not provide sufficient shelter from the weather.

An “open house” was held on June 8, 2000 to allow the neighbors to walk the site. At that time, Location 1 for both the gazebo and viewing platform were staked so that residents could get an idea of the size and location of each of the structures.

Cost Estimate

The total estimated construction cost for the project is approximately $480,000 and the planning and engineering cost is approximately $170,000. The construction cost estimate includes 10% for mobilization and 20% contingency. The landscaping portion of the cost is $110,000. The remaining cost is for the site work and construction of the gazebo and viewing platform. Please refer to Appendix C for a detailed breakdown of the cost estimate.

The project will be funded by a combination of existing District funds and availible grants. The District will be applying for the California Department of Water Resources Urban Streams Restoration Program. The maximum funds available per project is $200,000.

Schedule

Following approval of the engineer’s report, the design will take 30 days. It is expected that the construction Notice to Proceed will be given on or before the first week of October. The construction phase will last approximately 40 days. The regrading and revegetation work will be the first phase. With this schedule, the Outdoor Classroom will be open for use beginning the first week of November.

Appendix A

Appendix B

Appendix C